

REMARKS

A Request for a One (1) Month Extension of Time pursuant to 37 C.F.R. 1.136 (a) and (b) is attached hereto.

The above-captioned patent application has been carefully reviewed in light of the non-final Official Action to which this Amendment is responsive. Claims 97, 100-103, 125-126, 137, 155-156, 159, and 161 have been amended in an effort to more clearly describe the present invention. To that end, it is believed that no new matter has been entered.

Claims 88, 89, 91-129, and 135-166 are pending in this application, wherein Claims 160 and 162-166 are withdrawn due to a Restriction Requirement. Claim 89 has been canceled.

All pending claims have been rejected on prior art grounds. Claim 102 has further been objected to by the Examiner, based on informalities. In order to simplify the issues for consideration by the Examiner and to expedite allowance of the present application, Applicants have canceled and/or amended certain claims. The Applicants' cancellation or amendment of certain claims will not be taken as an indication that the Applicants agree that the standing claim rejections are proper. Applicant respectfully requests reconsideration based on the amended claims, as well as the following discussion.

Turning to the prior art rejections, the Examiner has rejected the following claims under 35 U.S.C. § 103(a): Claims 88-89, 92-93, 159, and 161 as being unpatentable over Miyano (U.S. Patent No. 5,840,014) in view of Kweon (U.S. Patent No. 6,411,327); Claims 91, 94-96, 98-99, 101-116, 125-129, 135-147 and 152-158 based upon Miyano in view of Kweon as applied to Claims 159 and 161, and further in view of Sakiyama (U.S. Patent No. 6,063,023); Claims 100, 117-120, 122-124, and 148-151 based upon Miyano in view of Kweon and Sakiyama as applied to Claim 114, and further in view of Hori (U.S. Patent No. 6,191,809); Claim 97 based upon Miyano in view of Kweon and Sakiyama as applied to Claim 127, and further in view of Kashiwagi (U.S. Patent No. 6,037,939); and Claim 121 based upon Miyano in view of Kweon, Sakiyama, and Hori as applied to Claim 117, and further in view of Ko (U.S. Patent No. 5,710,428).

Obviousness (35 U.S.C. § 103).

Each of the prior art rejections presently made against the claims by the Examiner is based upon Section 103 for obviousness. The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. MPEP § 2142. MPEP §§ 2142 and 2143 set forth the three basic criteria that must be met in order for an Examiner to establish a *prima facie* case of obviousness:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In order to support a conclusion that a "claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985), cited in MPEP § 2144. In attempting to establish this required "convincing line of reasoning" to support a § 103 rejection, an Examiner cannot resort to "hindsight" based on the Applicant's disclosure, but instead must reach any determination of obviousness "on the basis of facts gleaned from the prior art." MPEP § 2142. Furthermore, [i]t is never appropriate [for an Examiner] to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principal evidence upon which a rejection is based." MPEP §2144.03; *In re Lee*, 277 F.3d 1338, 1343-44 (Fed. Cir. 2002); *In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

The Federal Circuit routinely reverses § 103 obviousness rejections that are not supported by the required "convincing line of reasoning" by an examiner. For example, the Federal Circuit has established that a § 103 obviousness rejection cannot be premised on the conclusory assertion that a prior art device *may* be modified to produce the claimed invention unless the prior art also suggests the desirability of the combination. See *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992); *In re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992); *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984); MPEP

§2143.01. Similarly, § 103 obviousness rejections asserting that that the claimed invention is merely a relatively simple or minor design change to the prior art are also inappropriate. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371-72 (Fed. Cir. 2000); *Innovative Design Enter., Inc. v. Circulair, Inc.*, 1997 WL 534891, at *8 (N.D. Ill. August 21, 1997); *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 935 (Fed. Cir. 1990); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). Likewise, any § 103 obviousness rejection based on an examiner's determination that a modification to the prior art would have been "obvious to try" will not stand. *See, e.g., In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988); *In re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987).

Yet another example of an improper § 103 obviousness rejection that does not provide a "convincing line of reasoning" is an assertion by an examiner that the claimed invention is an obvious "design choice" over the prior art. *See In re Chu*, 66 F.3d 292, 298-99 (Fed. Cir. 1995); *In re Gal*, 980 F.2d 717, 719 (Fed. Cir. 1992). The Federal Circuit has held that any rejection based on the mere assertion of "design choice" must fail unless an examiner can point to some teaching or suggestion in the prior art to make that design choice. *In re Chu*, 66 F.3d at 299.

Furthermore, the prior art used in an obviousness rejection should come from analogous fields. The test for non-analogousness that has been adopted by the Federal Circuit involves a two-step inquiry. In the first step, whether a prior art reference is analogous requires a determination of whether the art is from the same field of endeavor regardless of the problem addressed. The second inquiry requires that if the reference is not within the field of the inventor's endeavor, whether it is still reasonably pertinent to the particular problems with which the inventor is involved.

In the present Office Action, the Examiner relies on various combinations of a total of six prior art references to reject all pending claims under 35 U.S.C. § 103. But as discussed below, Applicants respectfully submit that the Examiner has impermissibly resorted to hindsight and fails to present the "convincing line of reasoning" required to make such combinations in the absence of evidence of any suggestion or motivation to modify or to combine the references.

For example, the Examiner uses the combination of Miyano and Kweon along with other secondary references to reject all of the pending claims based on obviousness. As the Examiner admits, Miyano does not teach or suggest the use of

a stereo endoscope with an optical system including a refractive image splitter for passing an image of an object to be split along a single optical axis into two images to a focusing lens and onto an electronic imaging device. The Examiner attempts to find these missing elements by combining Miyano with Kweon. But unlike Miyano, which is directed to an endoscope, Kweon is directed to a different technical field, namely a stereo camera system for providing a frame of a picture of an object to measure the distance between the stereo camera system and the object.

Nevertheless, the Examiner concludes without any evidence of motivation or suggestion to combine these non-analogous references, that it would have been obvious to replace the camera system of Miyano with the stereo camera of Kweon. Such hindsight reconstruction is not permissible without support.

Similarly, regarding Claim 127, the Examiner admits that the combination of Miyano, Kweon, and Sakiyama does not disclose measuring using a cursor and the display of a symbol, which indicates both a type of measurement being performed and the role of the cursor in that measurement. Nevertheless, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to combine the references to use a GUI system to accomplish the Applicants' invention. Likewise, regarding Claim 100, the Examiner admits that the combination of Miyano, Kweon, Sakiyama, and Hori does not disclose a system wherein a user is signaled if a difference between said optical characteristics data set and global alignment data determined from the image exists. Nevertheless, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to perform this comparison to verify the accuracy of data in the system and notify the user of the results. Such conclusions are not permissible without support.

Obviousness Rejection of Independent Claims (159 and 161) Based on the Combination of Miyano and Kweon.

As discussed above, Applicants respectfully submit that the combination of Miyano and Kweon is improper since a person of ordinary skill in the art would not be motivated to make such a combination. Nevertheless, in order to simplify the issues for consideration by the Examiner and to expedite allowance of the present application, Applicants have amended Claims 159 and 161 to more clearly describe the present invention and to also incorporate and further clarify the limitations of dependent Claim 89 (which has been canceled). As shown in figures and described in the specification of the present application, unlike the prism disclosed in Kweon,

the prism of the present invention is oriented so that the ridge is facing the object and the substantially flat base is facing the electronic imaging device. As discussed in the present application, this orientation advantageously permits a wide field-of-view lens system. And as can be readily appreciated by one of skill in the art, this orientation facilitates assembly of the prism, which may be located in a detachable tip as noted in Claim 91, to the remainder of the optical system, including the lens and imager. Applicants respectfully submit that the inventions claimed in amended independent Claims 159 and 161 are not rendered obvious by the prior art and are in allowable condition.

*Obviousness Rejection of All Dependent Claims (88, 91-129, and 135-158)
Based on the Combination of Miyano, Kweon, and Other References
(Sakiyama, Hori, Kashiwagi, and Ko).*

As discussed above, Applicants respectfully submit that the combination of Miyano and Kweon (and all combinations depending therefrom) is improper since a person of ordinary skill in the art would not be motivated to make such a combination. Furthermore, all of the rejected dependent claims depend from independent Claims 159 and 161, which have been amended to more clearly describe the present invention and overcome the pending prior art rejections. Since “[d]ependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious,” *In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988), Applicants request that the Examiner’s rejection to the dependent claims be withdrawn.

*Obviousness Rejection of Claim 97 Based on the Combination of Miyano,
Kweon, Sakiyama, and Kashiwagi.*

Applicants have amended Claim 97 to more clearly describe the present invention. In order to improve placement of measurement cursors, Applicants have invented a method and system where portions of the first and second stereo images where the cursor is or is to be placed are displayed at a higher magnification to facilitate cursor placement without obstructing the original images as shown in Figs. 27-29 of the present application. None of the prior art references cited by the Examiner teach or suggest such a method or system. As an initial matter, Kashiwagi is non-analogous art to the present invention and should not be used in any obviousness combination. In any event, as demonstrated in the figures, the magnification method used in Kashiwagi results in the magnified area in original

image being obscured. In addition, Kashiwagi does not deal with the use of cursors to select detailed points. Accordingly, Applicants respectfully submit that amended Claim 97 is in allowable form.

Obviousness Rejection of Claim 100 Based on the Combination of Miyano, Kweon, Sakiyama, and Hori.

Applicants have amended Claim 100 to more clearly describe the present invention. In order to avoid measurement errors caused by a user incorrectly identifying a detachable tip to be used on a probe, Applicants have invented a method and system wherein a user is signaled if a difference exists between the optical characteristics data set associated with the tip and the global alignment data determined from said image. While acknowledging that such an invention does not exist in the prior art, the Examiner rejects the claim, concluding that it would have been obvious to one of ordinary skill in the art to perform this comparison to verify the accuracy of data in the system and notify the user of the results. But as discussed above, such conclusions are not permissible without support and do not satisfy the Examiner's burden to provide a "convincing line of reasoning." Accordingly, Applicants respectfully submit that amended Claim 100 is in allowable form.

Obviousness Rejection of Dependent Claims 101 & 102 Based on the Combination of Miyano, Kweon, and Sakiyama.

Applicants have amended Claims 101 & 102 to more clearly describe the present invention. Applicants have invented a system and method for generating or selecting optical characteristics data set for detachable probe tip based on data determined from an image. Claims 101 & 102 are directed to selecting a predetermined optical characteristics data set for detachable probe tip based on data determined from an image. Sakiyama, on the other hand, creates a unique optical characteristics data set for each optical adapter rather than selecting a optical characteristics data set as in amended Claims 101 and 102. Accordingly, Applicants respectfully submit that amended Claims 101 and 102 are in allowable form.

Obviousness Rejection of Dependent Claims 103-109 and 137-145 Based on the Combination of Miyano, Kweon, and Sakiyama.

Applicants have amended Claims 103 and 137 to more clearly describe the present invention. Applicants have invented a system and method of calibration for generating an optical characteristics data set using a plurality of object target points

at a plurality of object target distances. Sakiyama, on the other hand, uses a plurality of object target points at a single object target distance. Unlike the present invention, Sakiyama's calibration technique provides no calibration information for the z-axis, and can only provide this by changing the object target distance by moving the tip to create a second object target distance, which introduces the possibility of additional errors and inaccuracy. Furthermore, while Sakiyama discloses the ability to handle color images, there is no disclosure of color balancing as required by Claim 104. Accordingly, Applicants respectfully submit that amended Claims 103 and 137 (and dependent Claims 104-109 and 138-145) are in allowable form.

Obviousness Rejection of Dependent Claims 115 & 116 Based on the Combination of Miyano, Kweon, and Sakiyama.

Applicants have invented a system and method for automatic matching of points wherein a user can position a cursor in the first image and, once the cursor stops moving, providing automatically-identified possible matches for the user to select in the second image. Accordingly, in the present invention, to view the point(s) created by automatic matching, the user need not select the point in the first image until he/she is confident that the automatic matching appears to be accurate. In addition, Applicants' present invention provides the user with a choice of a plurality of automatically-identified possible matches for the user to select in the second image. Sakiyama, on the other hand, does not provide the ability to view the automatically identified matching point simply by stopping the cursor, nor does it provide more than one automatically-identified possible matches. Accordingly, Applicants respectfully submit that Claims 115 and 116 are in allowable form.

Obviousness Rejection of Claims 117-124 and 148-151 Based on the Combination of Miyano, Kweon, Sakiyama, Hori, and Ko.

Applicants have invented a system and method for automatic matching of points using global alignment between the first and second images. This global alignment is used to find matching points between the first and second images by determining factors such as vertical and horizontal shifts between the images. This information is then used to improve matching reliability at variable object distances. Hori, on the other hand, does not perform global alignment, but rather simply corrects the view of the image(s) at a given object distance so that the images appear virtually the same. In doing so, Hori does not determine any vertical or horizontal

shifts between the images that can be used to improve matching reliability at variable object distances. Accordingly, Applicants respectfully submit that Claims 117 and 148 (and dependent Claims 118-124 and 149-151) are in allowable form.

Obviousness Rejection of Dependent Claims 125-126 and 155-156 Based on the Combination of Miyano, Kweon, and Sakiyama.

Applicants have amended Claims 125-126 and 155-156 to more clearly describe the present invention. Applicants have invented a system and method for measurement that provides an indication of measurement accuracy that is based in large part on the object distance. Applicants' invention also provides the ability to designate a maximum estimated error limit for the measurement accuracy above which the user is provided a warning. As demonstrated in Figs. 24 and 25 of the present application, a 1 unit matching error at one object distance will affect the measurement accuracy differently than the same 1 unit matching error at a different object distance. Accordingly, knowledge of matching accuracy alone cannot provide a reliable indication of measurement accuracy. Sakiyama, on the other hand, only provides an indication of matching accuracy, and does not take into account the object distance. Accordingly, Applicants respectfully submit that amended Claims 125-126 and 155-156 are in allowable form.

Obviousness Rejection of Dependent Claims 127-128 Based on the Combination of Miyano, Kweon, and Sakiyama.

Applicants have invented a system and method for measurement using an onscreen cursor and symbol, which indicates both a type of measurement being performed and the role of the cursor in the measurement. As demonstrated in Figs. 28-29 of the present application, when measurements require more than two points, such as in point to line or point to plane measurements, the user must know whether the cursor being placed is used to define the "point," the "line," or the "plane." This information is provided with a symbol showing what element is to be selected by the active cursor. Furthermore, the present invention allows the user to keep the measurement points made in a previous measurement when a different type of measurement is selected. Examiner admits that the combination of Miyano, Kweon, and Sakiyama do not disclose Applicants' present invention of Claims 127 and 128. Nevertheless, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to combine the references to use a GUI system to accomplish the Applicants' invention. But as discussed above, such conclusions are not

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permissible without support and do not satisfy the Examiner's burden to provide a "convincing line of reasoning." Accordingly, Applicants respectfully submit that Claims 127 and 128 are in allowable form.

Objections to Claim 102 Based on Informalities.

Claim 102 has been amended to clarify that "said probes" refers to "said plurality of detachable probe tips" as assumed by the Examiner. Withdrawal of the objection is respectfully requested.

Conclusion.

In summary, it is believed that the above-captioned patent application is now in an allowable condition and such allowance is earnestly solicited.

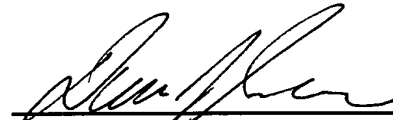
If the Examiner wishes to expedite disposition of the above-captioned patent application, she is invited to contact Applicants representative at the telephone number below.

The Director is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

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